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Dynamic Load Balancing on Distributed Computing Environment

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Recently, on the development of network environment, the research of wide area distributed computing such as the Grid is very active in a method for efficiently utilizing many resources for computing. In the development a distributed programming language to simply describe network objects has also been improved. However, there are few methods for load balancing in the fully distributed environment, many of them are mainly centralized master/slave methods with the workpool.

In this study, we propose a load balancing method on a distributed environment. In the implementation technologies, we use JAVA and HORB for the description of the collecting Web links in the distributed system with load balancing.

The computer system constructed as a tree structure, and the adjacency computers exchange load between only themselves. The program composes of multiple modules: central manager for the division and unification, Web link collection task, management of the data, and the coordinating other computers. We stabilize the distributed processes by using the multi-thread and the Time-Class of JAVA.

In the experiment on 10 computers, it has been shown that the high load move based the collection situation, and that the load of each computer can be balanced by triggered for a high load based on the collections at that time.